

REMARKS

By this amendment, applicants have amended claim 9 to clarify that the inner tube limits retention of trace-hydrocarbons to be consistent with claim 16. See, the paragraph bridging pages 1 and 2 of applicants' specification.

Claims 9 - 23 stand rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 5,090,256 to Issenmann in view of United States Patent No. 5,566,720 to Cheney et al. Applicants traverse this rejection and request reconsideration thereof.

The rejected claims relate to an analysis and/or measuring device comprising means for extracting, in the gaseous form, hydrocarbons contained in a liquid drilling fluid after drilling in a reservoir rock, means for transporting the extracted gases and means intended for analysis and measurement of these extracted gases. The present invention represents an improvement in such an analysis and/or measuring device in that the transport means include a tubular line comprising an inner tube made from plastics material chosen to limit retention of traces of gaseous hydrocarbon. The tubular line is typically several tens of meters long, e.g., 50 meters, separating the wellhead from the analysis and measurement means that are typically situated in a mud logging shelter separate from the extractor. Retention, adsorption and absorption phenomena in the tubular line can lead to erroneous qualitative analysis results and make quantification difficult or even impossible. See, the paragraph bridging pages 1 and 2 of applicants' specification. By choosing the plastics material from which at least an inner tube of the tubular line is made, applicants can limit the retention, adsorption and absorption phenomena with respect to the trace hydrocarbons. Such is neither disclosed nor suggested by either Issenmann or Cheney et al.

The patent to Issenmann discloses a method and apparatus for sampling the gaseous content of a liquid laden with solids. The method and apparatus involve sampling the liquid as close as possible to the source of the liquid. It is disclosed that a strainer housing having a strainer plate for filtering out debris in the liquid is connected to a suction pump for sucking the liquid into the housing and to the pump. The pump delivers the sampled liquid to a degassing device mounted on a frame within the pump. The degassing device agitates the liquid to liberate gases suspended therein. The gases are then collected from the degassing device so that the gases may be analyzed. A motor mechanism on the frame drives the pump a rotating agitator in the degassing device and a rotating scraper on the exterior of the strainer plate simultaneously. This method and apparatus are disclosed to be particularly applicable to the sampling of drilling mud from an oil well exploration site for purposes of analyzing the hydrocarbon content of the drilling mud. This patent discloses that a flexible tube 25 is connected to a nozzle 24 to conveying gases released from the liquid inside the container of the degassing device 23 to a collecting tube 26 mounted thereto. The collecting tube 26, in turn, delivers the gasses through a tube 27 to an analyzing device (not shown). However, absolutely no mention is made in Issenmann of the need to provide any of these tubes with an inner tube which limits retention of trace hydrocarbons.

The patent to Cheney et al relates to an elongated fuel and vapor tube having multiple layers. The tube is disclosed to be for conveying fluids containing hydrocarbons and has an inner surface capable of prolonged exposure to the hydrocarbon-containing fluid made up of a melt processible fluoroplastic terpolymer composed of a polyfluorinated alkylene, and α -fluoro-olefin and a fluorinated vinyl compound. The tube is disclosed to be for use in a motor vehicle, in particular, as a

fuel line or vapor recovery line in a motor vehicle. There is absolutely no suggestion in Cheney et al or in any of the prior art to use such a tube with the apparatus of Issenmann. Accordingly, there would have been no motivation to combine the teachings of Issenmann and Cheney et al in the manner urged by the Examiner.

Moreover, the present invention solves the problems of retention, adsorption and absorption phenomena in the tubular line separating the well head from the analysis and measurement means, the tubular line being several tens of meters long (see claim 15), e.g., 50 meters long. The problems inherent in the use of such a tubular line are not disclosed by either Issenmann or Cheney et al and the solution of the present invention is certainly not suggested. The Cheney et al patent merely describes an inner layer which "exhibits resistance to the components contained in conventional gasoline fuel mixtures" There is no suggestion to use the tube of Cheney et al to limit retention of trace hydrocarbons and clearly no suggestion to use it in the apparatus of Issenmann. Accordingly, the presently claimed invention is patentable over the proposed combination of Issenmann and Cheney et al.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

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To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 612.40180X00),
and please credit any excess fees to such deposit account.

Respectfully submitted,

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